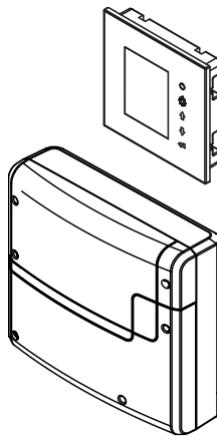


Infra cabin control unit

IMPERA IR



INSTALLATION AND OPERATION MANUAL

CE IPx4



Technical changes reserved

ENGLISH

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General safety instructions

Safety levels

Safety instructions and important operating instructions are classified according to ANSI Z535.6. Please familiarise yourself with the following terms and symbols:

DANGER

Danger

Indicates a hazardous situation which, if not avoided, will result in death.

WARNING

Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Caution

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Notice

Indicates a hazardous situation which, if not avoided, will result in damage to the unit.

Assembly and installation



These installation instructions are intended for qualified personnel familiar with the laws and regulations applicable to electrical installations at the installation site. Observe the following general safety instructions during assembly, setup and commissioning.

Risk to life and limb and Risk of fire

Risk to life and limb from electric shock and fire in the event of improper or faulty electrical connection. This risk also applies following completion of the installation work.

- ▶ The electrical installation of the relay box and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- ▶ Observe the stipulations in VDE 0100 part 701.
- ▶ The system must be disconnected and removed entirely from the mains supply before commencing installation and repair work.
- ▶ The housing cover must only be removed by a specialist.
- ▶ Do not install control units, relay boxes and modules in enclosed cabinets or wood panelling.

Fire hazard from overheating

Infrared emitters and heating foils without overheat protection can lead to overheating of the cabin and fire. Flammable parts must not exceed a temperature of 140°C when the unit is operated as intended or in the event of a malfunction.

- ▶ Install only infrared emitters or heating foils that are designed and installed in such a way that they do not pose a fire hazard when the unit is operated as intended. Alternately, infrared emitters or heating foils with overheat protection as per EN 60335-2-53 may be used.
- ▶ Install a safety temperature limiter if needed.
- ▶ Observe the manufacturer's safety and installation instructions for infrared emitters and heating foils.
- ▶ Observe the cabin manufacturer's safety and installation instructions.

Operator instructions

The operator of the infrared or sauna cabin must be instructed in the general safety instructions during commissioning. The operator must be given a copy of the instructions for use.

Risk of electric shock A risk to life and limb from electric shock and fire arises in the event of improper repair work. This risk also applies after work is completed.

- ▶ The housing cover must only be removed by a specialist.
- ▶ Repairs and installations must only be performed by a trained specialist.
- ▶ The system must be disconnected and removed entirely from the mains supply before commencing repair work.
- ▶ Use only original spare parts from the manufacturer.

Risk of burns and chemical burns Touching hot parts may lead to skin burns and chemical burns of the skin.

- ▶ The operator must be familiar with the unit's hot parts and be able to identify them.
- ▶ The operator must be familiar with the settings for the heating period and understand how it is controlled.

Health risks Spending time in an infrared or sauna cabin can lead to serious health risks or even death for persons with health impairments.

- ▶ Persons with health impairments who spend time in a sauna must consult a doctor before entering an infrared or sauna cabin.

Equipment damage due to overuse Excessive humidity in commercial infrared or sauna cabins can lead to property damage.

- ▶ In a commercial infrared or sauna cabin, the heating period must be set so that it switches off automatically after a specific period of time.
- ▶ If the heating period does not switch off automatically, cabin use must be supervised at all times.
- ▶ Inspect the cabin before each use.

Operation by children or persons with reduced mental capacity

Children and persons with reduced mental capacity can be a risk.

- ▶ Children must be supervised to ensure they do not play with the unit.
- ▶ Children under 8 should not operate the infrared cabin.
- ▶ The settings for the heating period must only be used by children under 8 years of age if they are supervised by an adult.
- ▶ The infrared cabin must only be used by persons with reduced mental capacity, or limited physical or sensory abilities under supervision or if they have already been instructed in its use and understand the risks.
- ▶ Children and persons who have not received proper instruction must not clean or service the system.

Standards and regulations

The following standards, in their currently applicable versions, were observed during design and construction.

Local regulations also apply to the installation and operation of heating, sauna, and steam room systems.

Standard	Title
DIN EN 60335-1	Household and similar electrical appliances - Part 1: General requirements
DIN EN 60335-2-30	Household and similar electrical appliances – safety - Part 2-30: Particular requirements for room heaters
DIN EN 60335-2-53	Household and similar electrical appliances – safety – Part 2-53: Particular requirements for sauna heating appliances and infrared cabins
DIN EN 60335-2-96	Household and similar electrical appliances – safety - Part 2-96: Particular requirements for heating equipment
DIN EN 55014-1	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission
DIN EN 55014-2	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity

Identification

The Relay Box for Infrared Cabins can be used for the following installations:

- in a multi-cabin installation with one infrared cabin and a compatible control unit as an add-on.
- in conjunction with a control unit to operate an infrared cabin.

Unit specifications

Nameplate

The nameplate is attached to the underside of the base of the housing.



- A** Name
 - B** Model
 - C** Item number
 - D** operating voltage
 - E** switching output
 - F** Country of origin
 - G** Manufacturer
 - H** Manufacturing date
 - I** Serial number
-  Nameplate (example)

Requirements for operation and storage

The relay box is only intended for installation outside the infrared cabin. The installation location must fulfil the following climate conditions:

- Ambient temperature during operation -10°C to 40°C
- Storage temperature -20°C to 60°C

Intended Use

The Relay Box for Infrared Cabins is designed to operate infrared emitters and heating foils in infrared cabins. It must only be mounted on a wall. The IR module unit must be used in order to operate infrared heating foils and infrared emitters in a sauna cabin.

The Relay Box for Infrared Cabins is suitable for cabins used in private and commercial settings.

Foreseeable misuse

The following are considered instances of foreseeable misuse:

- The infrared heating foils do not have an integrated temperature sensor with overheat protection.
- The control and sensor cable plugs are plugged in incorrectly.
- The cabin addresses are programmed incorrectly.
- The unit is operated without knowledge of or compliance with the safety instructions.
- Operating, service and maintenance requirements are not observed.
- The unit is operated after technical or other modifications are made to the relay box.

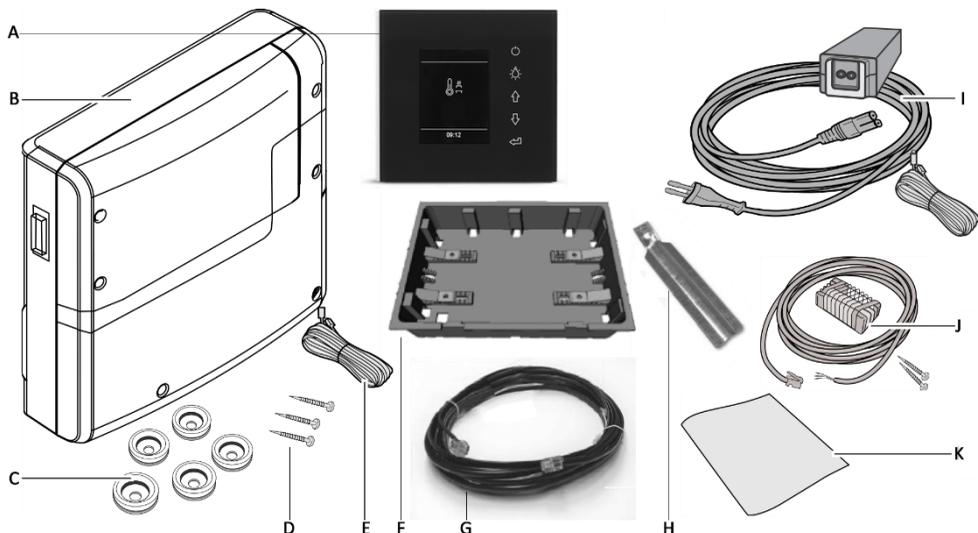
The unit is operated by children or persons with reduced mental capacity or by persons who have not been thoroughly instructed in its use.

Description of the unit

Scope of delivery

The relay box is enclosed in a plastic housing. The housing completely encloses the circuit board and the electronics.

The following components are included in the scope of delivery:



A Control panel with colour display

B Relay box with 2-piece front cover

C 5 bushings

D 3 wood screws 5 x 25 mm

E 10-m sauna bus connecting cable with RJ12/RJ12 modular plugs

F Housing base for flush-mounted installation of the control panel, with mounting brackets

G Connection cable (control panel – main block) with RJ14 / RJ10 plugs

H De-installation tool (for control panel)

I Power supply with connection cables

J Temperature sensor including 5-m connecting cable with RJ10 plug, housing, circuit board, 2 screws 4x40 mm

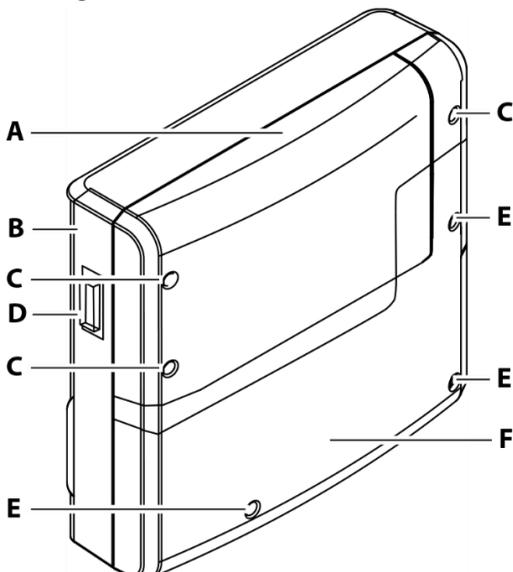
K Installation and operating Instructions

Accessories (optional)

Accessories	Item no.
20-m connecting cable for temperature sensor	94.6281
50-m connecting cable for temperature sensor	94.6282
25-m connecting cable for control unit (RJ10/RJ14)	94.6285
10-m connecting cable for sauna bus (RJ12/RJ12)	94.5861
25-m connecting cable for sauna bus (RJ12/RJ12)	94.4647
50-m connecting cable for sauna bus (RJ12/RJ12)	94.4648
IR module as installation add-on	94.6966
IR plug-in module with adapter cable	94.2046
IR plug-in module without adapter cable	94.4960
2.5-m connecting cable for IR plug-in module	94.4396

Overview of relay box

Housing



- A** Housing cover – top piece
 - B** Housing
 - C** Retaining screws for top piece
 - D** Unit switch
 - E** Retaining screws for bottom piece
 - F** Housing cover – bottom piece
-  Relay box

Unit switch

The relay box is equipped with an on/off switch on the left side.



Position I:
Relay box is switched on.
The relay box is ready for operation in standby mode.

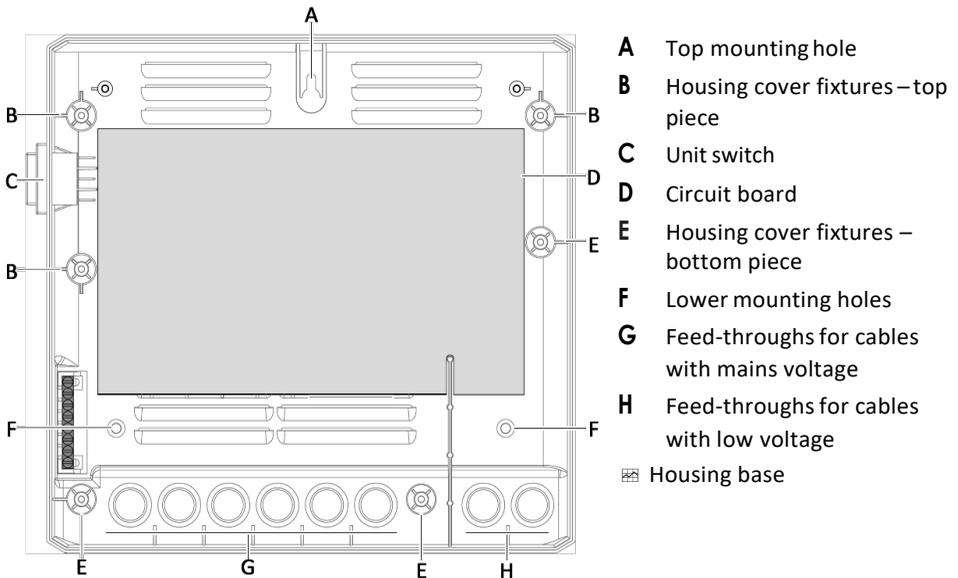


Position 0:
Relay box is completely switched off.
Parts of the circuit board are still energized.



Position II:
Cabin light is switched on, relay box is switched off. Position for maintenance and cleaning.

Internal view of relay box



The cables for mains supply and low voltage can be routed through the existing holes on the back side or base of the housing.

Technical data

Ambient temperature	-10°C to +40°C
Storage temperature	-20°C to +60°C
Relay box housing	Plastic
Dimensions (H x W x D)	240 x 230 x 70 mm
Weight	Approx. 1.5 kg
Outputs/inputs	3 x RJ10 jack for sensor connection 2 x RJ12 jack for control unit and add-on modules Input for power supply plug
Power supply	230 V 1N AC 50 Hz
Switching output	Max. 3.5 kW
Circuits	3 separate circuits with total output of 3.5 kW, can be freely defined - 2 of which individually dimmable - 1 of which non-dimmable switching output
Temperature control	Based on ambient temperature: 30-70°C Based on personal preference using dimmable channels (zones)
Control characteristics	Digital output control on circuits 1 and 2
Connection for lighting	Min. 5 W (20 mA), resistive load, max. 100 W Dimmable energy-saving bulbs, max. 35 W Light source with conventional transformers, max. 60 VA Use only dimmable light sources.
Sensor system	Digital sensor for ambient temperature
Heating period limiter	Up to 6 hrs/12 hrs/infinite

Installation

This chapter describes how to install the relay box.

In a multi-cabin installation, all data lines and power supply cables must be routed and plugged in before installing the relay boxes and control units.

NOTICE

Equipment damage

Corrosive environments or environments with high levels of saline in the air could damage lines and circuit boards.

- ▶ Use the power unit only in non-corrosive environments.
- ▶ Salt aerosols should only be used inside the cabin.

Power supply and data lines

All electrical installations and all connecting lines routed inside the cabin must be suitable for an ambient temperature of at least 70°C in infrared- only cabins.

All lines must be routed in such a way that they are well-protected, e.g. in a cable conduit.

NOTICE

Electronics malfunctions

Routing data and power supply lines together can lead to electronics malfunctions because, e.g. because the sensor will not be detected.

- ▶ Do not route sensor and sauna bus lines together with power supply lines.
- ▶ Route separate cable conduits.

Line routing

The lines from the individual components to the power unit may not exceed 5.5 m in length.

If you connect more than one emitter per heating circuit, you must terminate the corresponding lines in the on-site plug-in modules outside the relay box.

The control line ^② must only be routed between the insulation and the outer wall of the cabin. Cabin insulation must be installed in such a way that the temperature in the area in which cables are routed cannot exceed 75°C.

Extending the control unit's control line

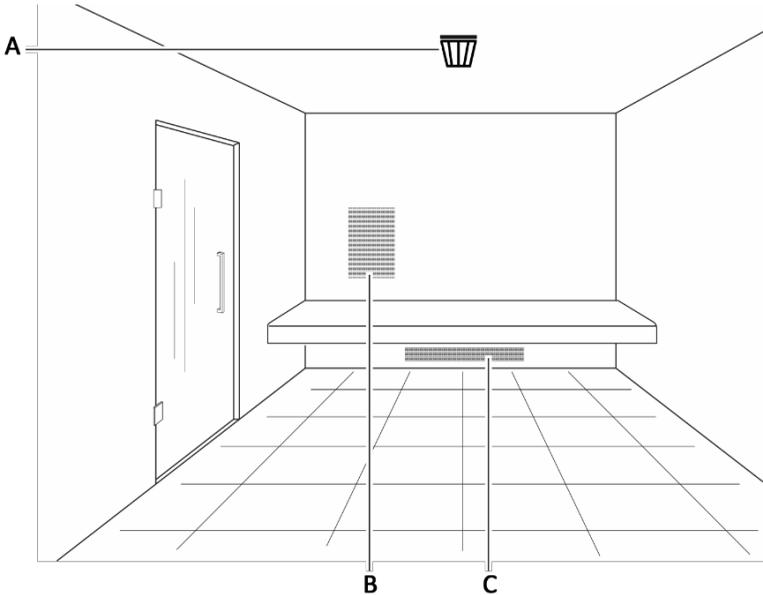
The control line may be extended to approx. 100 m, if necessary.

The maximum line length for the Emo Touch 3 control unit is 25 m. For extra long connections, special RJ10/RJ14 connecting lines with a length of 10 m, 25 m, 50 m and 100 m are available as an option.

Alternately, the 5-m line can also be extended with an RJ12/RJ12 coupling and an RJ12/RJ12 extension cord (optional accessory). If the line length is greater than 25 m, a special bus amplifier (accessory) with power supply must also be installed near the control unit and connected to it. The bus amplifier requires a 230-V mains connection.

Installation work inside the cabin

At minimum, the cabin lighting and a temperature sensor must be installed inside the cabin. Additional connections are possible, depending on the amenities, e.g. coloured lights and audio systems as optional add-on modules.



A Temperature sensor

B IR foil (installed inside the wall)

 Example – cabin

C IR emitter

The position and number of IR emitters and foils (IR emitters) can vary depending on the design of the cabin.

The temperature sensor must be installed where expected temperatures are the highest. In an infrared cabin, this is typically at the centre of the cabin ceiling.

NOTICE

Equipment damage due to improper installation

Additional modules with a safety temperature limiter can be mounted in a cabin.

- ▶ Additional modules with a safety temperature limiter can be mounted in a cabin.
- ▶ Never connect more than one safety temperature limiter to a module.
- ▶ Always connect the safety temperature limiter as an isolated contact.

Installing an infrared emitter

WARNING

Fire hazard from overheating

Infrared emitters and heating foils without overheat protection can lead to overheating of the cabin and fire. Flammable parts must not exceed a temperature of 140°C when the unit is operated as intended or in the event of a malfunction.

- ▶ Install only infrared emitters or heating foils that are designed and installed in such a way that they do not pose a fire hazard when the unit is operated as intended. Alternately, infrared emitters or heating foils with overheat protection as per EN 60335-2-53 may be used.
- ▶ Install a safety temperature limiter if needed.
- ▶ Observe the manufacturer's safety and installation instructions for infrared emitters and heating foils.
- ▶ Observe the cabin manufacturer's safety and installation instructions.

You can connect multiple IR emitters to terminals IR-1, IR-2 and IR-3. Ensure that the cross-section of the lines is sufficient.

The total output may not exceed 3.5 kW.

Connection	Control	Max. load	Total output
IR-1	Dimmable	1.5 kW	Max. 3.5 kW
IR-2	Dimmable	1.5 kW	
IR-3	Switchable	0.5 kW	

If terminals IR-1 and IR-2 together have a load of less than 2.3 kW, IR-3 can accept a maximum switching load of up to 1.2 kW. In this case, the fuse at F2 (T4A H 250V) must be replaced by a T6.3 A H 250 V fuse. See 5.2 Circuit board assignment.

Use a plug-in module if you want to connect multiple IR emitters to one connection.

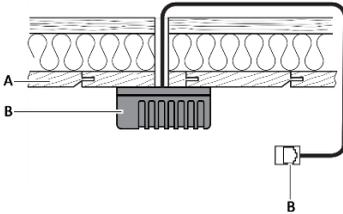
Installing the temperature sensor

The temperature sensor must be installed where expected temperatures are the highest.

The IR control system prevents ambient temperatures from exceeding 70°C. Therefore, a safety temperature limiter is not needed in IR-only installations. The safety temperature limiter on the relay box's circuit board is therefore jumpered by default.

Hardware + tools:

- Temperature sensor and connecting cables
- Drill to drill a hole in the cabin ceiling
- Screwdriver
- Taught wire, as needed



- A Cabin ceiling
- B Temperature sensor on housing
- C RJ10 plug for relay box

 Installation diagram

Installing the temperature sensor in the cabin

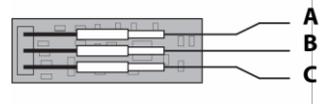
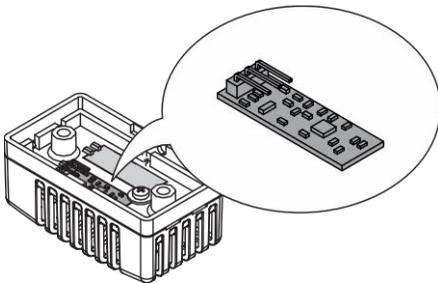
1 Identify the installation site.

① The temperature sensor should be installed in the middle of the cabin ceiling. This is where the highest temperature in the infrared cabin is expected.

2 Drill a hole in the cabin ceiling for the cable.

3 **HINWEIS** Do not pull at the plug when routing the control line(s). Doing so could damage the line. Attach the taught wire only to the cable. Route the sensor cable through the hole.

4 Open the temperature sensor's housing and connect the cable.



 Connector pins for sensor bus

- A Green (sensor bus)
- B White (sensor bus)
- C Brown (sensor bus)

5 Screw the sensor to the cabin ceiling and close the housing.

Installing cabin lighting

Lighting can be installed anywhere, however not near rising hot air. The light output is set to inductive load by default, but light bulbs, halogen HV bulbs and other resistive loads may also be connected to it. If required, the light output can also be manually set to capacitive loads.

Cabin lighting is not included in the scope of delivery. Observe the separate installation instructions for lighting.

Light source requirements

- Minimal output 5 W
- Resistive loads max. 100 W
- Dimmable energy-saving bulbs max. 35W
- Light sources with conventional transformers max. 60 VA
- Dimmable LED bulbs max. 60 W

NOTICE

Material damage

Lighting and the control panel could become damaged if non-dimmable light sources are installed. In this case, the warranty becomes void.

- ▶ Do not install lighting in the emitting range of an IR emitter.
- ▶ The lighting must conform to protection class IPX4 (splash-proof) and be resistant to ambient temperatures.
- ▶ Connect only dimmable light sources.

Relay box

The relay box must only be mounted outside of the cabin. Observe the following guidelines.

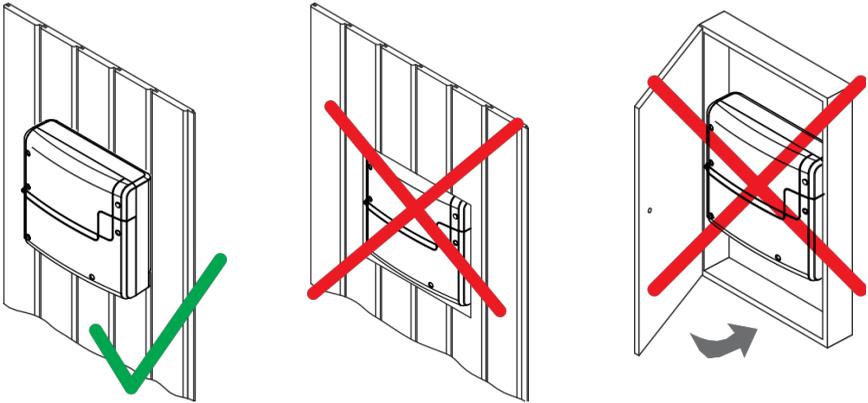
DANGER

Guidelines

Risk to life and limb and risk of fire

Risk to life and limb from electric shock and fire in the event of improper or faulty electrical connection. This risk also applies following completion of the installation work.

- ▶ Do not install relay boxes in enclosed cabinets or wood panel-ling.



☒ Proper and improper relay box installation

Recommended installation sites are:

- Outer wall of the cabin
- Utility room

If empty conduits for electrical installations are already present, this dictates the position of the relay box.

All lines should be routed before installing the relay box. Connections can be established later. Data lines must be routed and connected in such a way that they are not openly accessible.

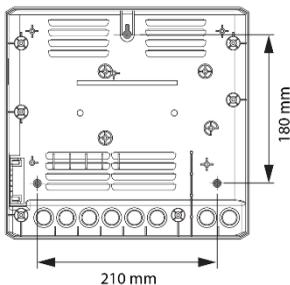
NOTICE

Electronics malfunctions

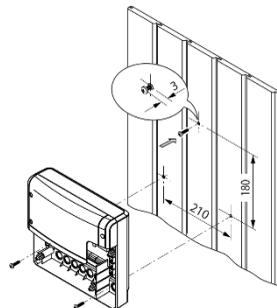
Routing data and power supply lines together can lead to electronics malfunctions because, e.g. because the sensor will not be detected.

- ▶ Do not route sensor and sauna bus lines together with power supply lines.
- ▶ Route cable conduits separately.

Measurements for installation

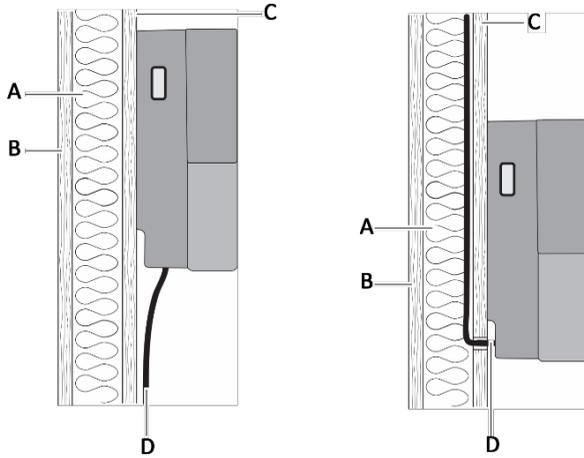


☒ Back of relay box



☒ Installation diagram

Line routing



A Insulation

B Inner wall of the cabin

D Diagram – routing of data and control line(s)

C Outer wall of the cabin

D Connecting lines

The power supply, S bus and sensor lines can be routed to the relay box as follows:

- The lines can be routed along the outer wall of the cabin. They are then passed into the housing from below. If they are not routed through a cable conduit or a duct, they must be secured so they cannot be pulled out.
- The lines can be routed between the insulation and the outer wall of the cabin. They are then passed into the housing from the rear.

In both cases, the cabin insulation must be installed in such a way that the temperature in the area in which cables are routed cannot exceed 75°C.

Installing the relay box

Necessary steps:

- ▶ Preparing for installation
- ▶ Removing the housing cover
- ▶ Installing the relay box

Tools + hardware

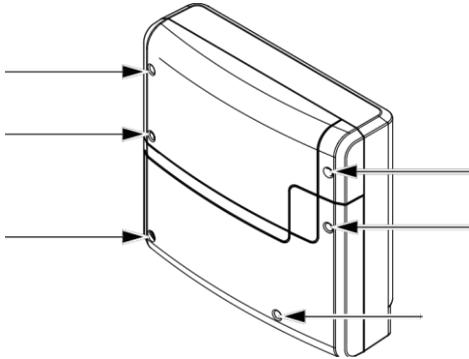
- Drill
- Wood screws 4 x 25 mm
- Mounting on a fixed wall: Screws 4 x 25 mm and corresponding anchors

Preparing for installation

- 1 Identify the installation site.
- 2 Route the lines.

Removing the housing cover

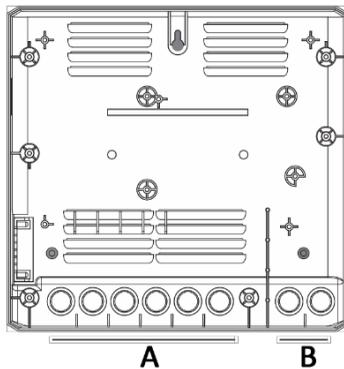
1 Unscrew the 6 screws for both parts of the housing.



2 Remove both halves of the cover.

① If you have already routed all data lines, you can set the DIP switches on the circuit board after you install the relay box.

3 Open the relay box conduits for the lines.



A Lines with mains voltage, e.g. mains supply line, heat

B Lines with low voltage, e.g. sensor line, S bus (sauna bus)

① Either from below or from the rear.

4 Insert supplied rubber grommets into the openings of the lower part of the housing.

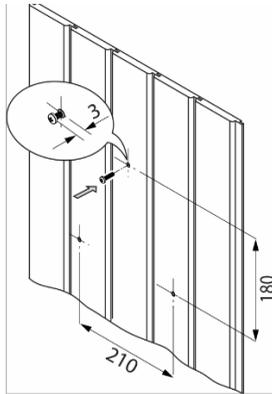
Installing the relay box

1 Drill one (1) hole above and two (2) holes below.

Horizontal distance between drill holes: 210 mm

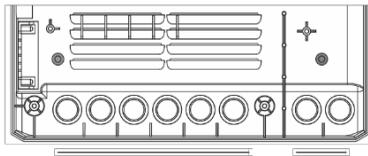
Vertical distance between drill holes: 180 mm

2 Insert the anchors as needed and screw in the top screw.



① Allow the screw to protrude approx. 3 mm so you can hook in the relay box.

3 Route the connection cables through the openings.



A

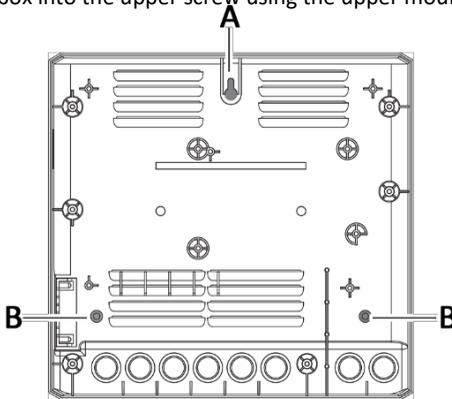
B

A Lines with mains voltage, e.g. mains supply line, heat

B Lines with low voltage, e.g. sensor line, S bus (sauna bus)

① Either from below or from the rear.

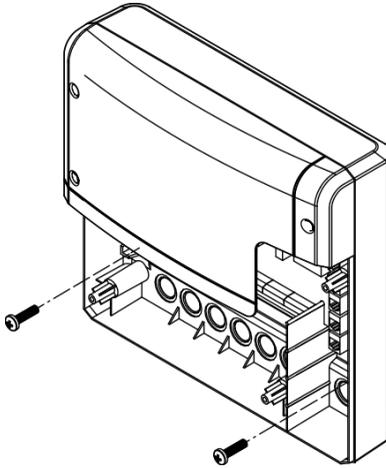
4 Hook the relay box into the upper screw using the upper mounting hole



A Top mounting hole

B Lower mounting holes

5 Securely tighten the relay box using the two lower mounting holes.



① Once you have completed all installation work you can connect the consumers and plug in the lines.

① 5.4 Connecting data lines

5.5 Connecting and configuring consumers

5.6 Setting the switches

Installation

This chapter describes how to connect the relay box's circuit board lines. For information on configuration of the control unit's panel, see chapter Commissioning.

You can connect both infrared radiators and infrared foils. Both versions are referred to as IR emitters in the following section. However, in instances where different settings must be made, they will be referred to specifically by name.

Recommended installation sequence

Before commencing installation, ensure that the relay box and the control unit are mounted. Furthermore, all cabin work must be complete: IR emitter, temperature sensor, lighting, etc.

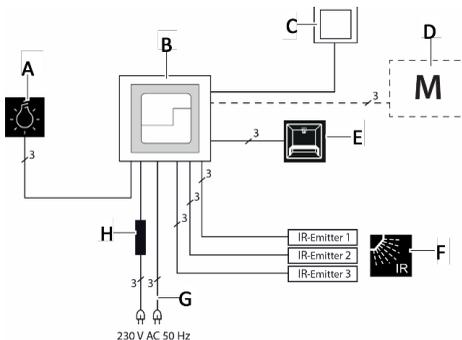
Complete installation in the following sequence:

- Plug the S bus and sensor lines into the relay box.
- Connect the consumer lines to the relay box.
- Set the DIP switch for the unit address.
- Set the jumper for the IR emitter to IR-1 and IR-2.
- Set the DIP switch for the channels.
- Establish connection to the power supply.
- Switch on the relay box and control unit.
- Configure the control unit's channels.
- Configure additional settings at the control unit, e.g. target temperature for emitters.

Sample installation

Standard installation

A standard installation has one single installed infrared relay box. The IR emitters, lights, temperature sensors and control unit are connected to this relay box.

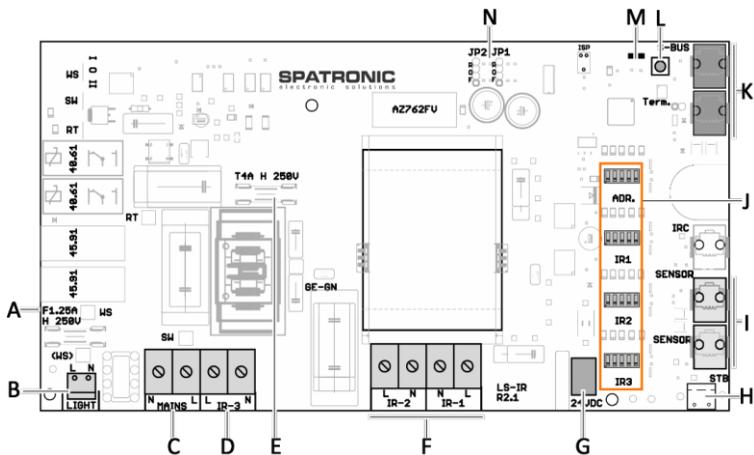


- | | |
|------------------------------------|-----------------------------|
| A Cabin lighting | E Temperature sensor |
| B Relay box | F IR emitter |
| C Control unit | G Powersupply |
| D Add-on modules (optional) | H Power supply |

☒ Standard installation for one cabin

Circuit board assignment

The S bus and sensor bus plugs are connected to the relay box circuit board. The IR emitters and the cabin lighting must be connected to the terminals.



- | | | | |
|--|---|----------|--------------------------------------|
| A | Fuse for light output | H | Safety temperature limiter/jumper |
| B | Cabin lighting connection (L+N for lighting only) | I | Sensor bus |
| C | Main power supply connection | J | DIP switch – unit address, channels |
| D | Connection for switched IR emitters | K | S bus (sauna bus) |
| E | Fuse F2 (T4A H 250V) | L | Programming button for cabin address |
| F | Connections for dimmable IR emitters | M | Status LED, green and red |
| G | Power supply connection | N | Jumper – setting for foil/emitter |
|  | IR relay box circuit board | | |

If terminals IR-1 and IR-2 together have a load of less than 2.3 kW, IR-3 can accept a maximum switching load of up to 1.2 kW. In this case, the fuse at F2 (T4A H 250V) must be replaced by a T6.3 A H 250 V fuse.

Terminals

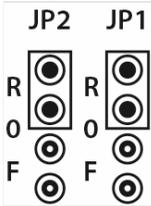
Multiple IR emitters can be connected to terminals IR-1, IR-2 and IR-3. The IR emitter lines must all have the same cross-section.

The terminal for lighting may be assigned only one line. It must only be used for cabin lighting. Use a plug-in module if you connect multiple emitters to one terminal. See 5.5 Connecting and configuring consumers.

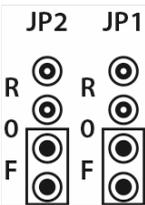
Emitter type – jumper JP1 and JP2

JP1 and JP2 are used to configure the emitter type for connections IR-1 and IR-2.

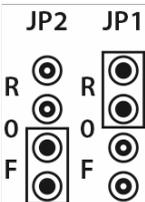
- R: IR emitter (R).
- F: IR foil (F).



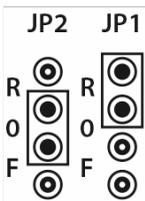
Emitters (R) are connected to IR-1 and IR-2.



Foils (F) are connected to IR-1 and IR-2.



Emitters (R) are connected to IR-1; foils (F) are connected to IR-2.



Emitters (R) are connected to IR-1. IR-2 is switched off.

Connection IR-3 is configured for emitters at the factory.

Connections IR-1 and IR-2 are switched off if no jumper is set. IR-3 remains switched on.

Channels – DIP switches IR1 to IR3

Standard channel group configuration

If emitters are connected to output IR-3 and emitters or foils are connected to outputs IR-1 and IR-2, the DIP switches for the channel groups are set as follows.

Example	Channel IR1 to IR3	1	2	3	4	5
ON 1 2 3 4 5 Example – channel A	A	ON				
	B		ON			
	C			ON		
	D				ON	
	E					ON

Do NOT combine dimmable and switchable IR emitters in one channel group.

Foils at IR-3

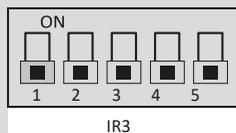
If foils are connected to output IR-3, the channels at IR3 must be set as follows:

Foils at IR-3	Channel	1	2	3	4	5
ON 1 2 3 4 5 IR3 Example – channel A	A		ON	ON	ON	ON
	B	ON		ON	ON	ON
	C	ON	ON		ON	ON
	D	ON	ON	ON		ON
	E	ON	ON	ON	ON	

IR emitter at IR-3 starts when cabin is switched on

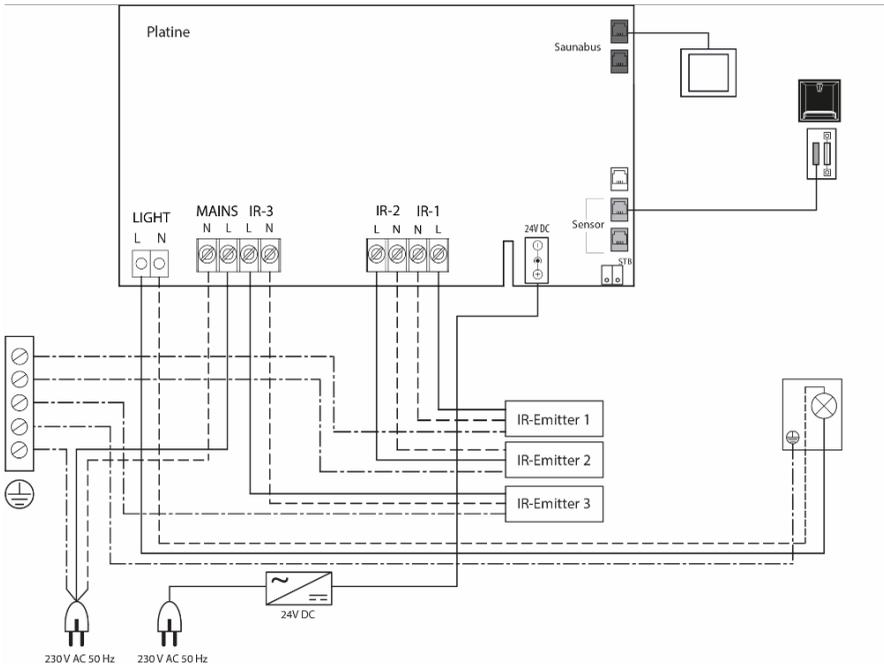
If you would like the IR emitter assigned to the IR-3 output to switch on when the cabin is switched on, the DIP switches in IR3 must all be set to OFF.

IR-3 starts with cabin



Connection diagram

The relay box is connected with a mains lead to the 230-V supply and fused separately with 16 A. At minimum, a 16-A cut-out with c characteristic must be used for fuse protection.



Connection example

To prevent overheating, install only infrared emitters or heating foils that are designed and installed in such a way that they do not pose a fire hazard when the unit is operated as intended. Alternately, infrared emitters or heating foils with overheat protection as per EN 60335-2-53 may be used.

Connecting data lines

NOTICE

Equipment damage due to improper installation

Additional modules with a safety temperature limiter can be mounted in a cabin.

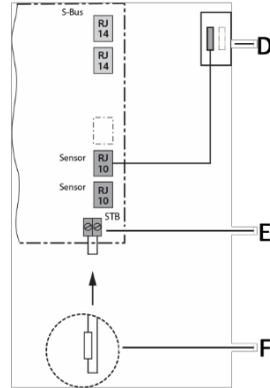
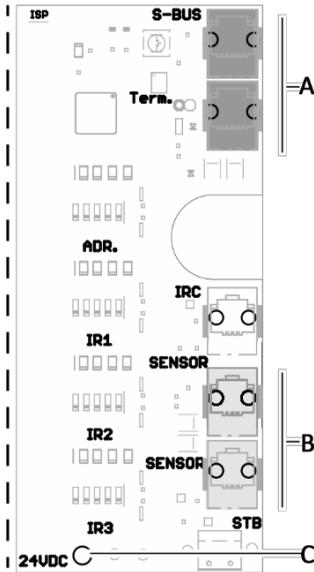
- ▶ Connect the safety temperature limiter only to the relevant module.
- ▶ Never connect more than one safety temperature limiter to a module.
- ▶ Always connect the safety temperature limiter as an isolated contact.

Connecting data lines

1 GEFAHR! Ensure that the IR relay box is current-free. Open the housing as needed.

① Removing the housing cover,  24

2 Route the line through the openings at the base or on the back of the housing.



A RJ14 plug from control unit

B RJ10 plug for sensor line

C Power supply connection

D Temperature sensor

E Safety temperature limiter

F Jumper at safety temperature limiter

3 Plug the S bus line RJ10/RJ14 from the control unit into the free jack RJ14 (S-BUS).

4 Plug the sensor line from the temperature sensor into the free jack RJ10 (SENSOR).

① The connected sensor is automatically recognized and configured by the control unit.

① Connect shielding of the line to ground if necessary.

5 Check if there is a jumper at the safety temperature limiter terminals.

① By default, the safety temperature limiter terminal is jumpered at the relay box circuit board. A safety temperature limiter is not needed for an IR-only installation, since temperatures above 70°C cannot be reached by the IR emitters.

Connecting and configuring consumers

DANGER

Risk of electric shock

A faulty electrical connection poses the risk of an electric shock. This risk also applies following completion of the installation work.

- ▶ Disconnect the system entirely from the mains supply.
- ▶ If retrofitting is required, the housing must only be opened by trained personnel.
- ▶ Electrical installation must only be carried out by a qualified and licensed electrician.
- ▶ The unit must be connected to the power supply according to the circuit diagram and the terminal scheme.

Recommended sequence:

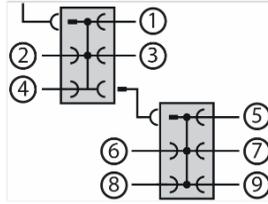
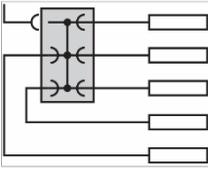
- Connect IR emitter
- Set jumper
- Connect cabin lighting

The lines from the individual components to the relay box may not exceed 5.5 m in length. The lines must be connected as shown in the circuit diagram.

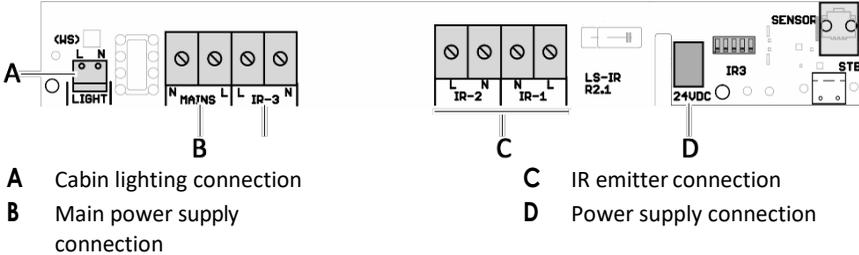
You can connect multiple IR emitters to each of the terminals IR-1, IR-2 and IR-3. The IR emitter lines must all have the same cross-section. The total output of IR-1, IR-2 and IR-3 together may not exceed 3.5 kW. Recommendation:

Connection	Control	Total output
IR-1	Dimmable	Max. 1.5 kW
IR-2	Dimmable	Max. 1.5 kW
IR-3	Relay output	Max. 0.5 kW

If terminals IR-1 and IR-2 together have a load of less than 2.3 kW, IR-3 can accept a maximum switching load of up to 1.2 kW. In this case, the fuse at F2 (T4A H 250V) must be replaced by a T6.3 A H 250 V fuse. If you connect more than one emitter per heating circuit, you must connect all lines to a plug-in module outside the relay box.



☒ Example – plug-in modules (optional)



Connecting consumers

1 GEFAHR! Ensure that the IR relay box is current-free. Open the housing as needed.

① Removing the housing cover.

2 Route the lines through the openings at the base or on the back of the housing.

3 Connect IR emitters to IR-1, IR-2 and IR-3(C).

Use a plug-in module if you connect multiple IR emitters to one terminal. See ☒ Example – plug-in modules (optional).

① The IR emitter lines must all have the same cross-section.

① Observe the total output:

IR-1 max. 1.5 kW, IR-2 max. 1.5 kW, IR-3 max. 0.5 kW.

4 Connect the cabin lighting to the light (A) terminal.

5 Connect the main power supply to the mains (B) terminal.

6 Connect the power supply to the 24-V DC jack (D).

① Do not establish a connection to the power supply until you have set all switches.

Setting the switches

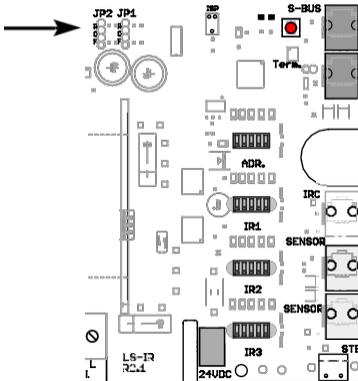
Once the IR emitters are installed and connected, the jumpers for the type of emitters and channel groups must be set. As a rule, the unit address for the relay box must not be changed.

The cabin address must only be programmed if the installation is a multi-cabin installation. See Programming the cabin address.

- ▶ Setting the jumper for the type of IR emitters.
- ▶ Setting the unit address.
- ▶ Setting channel groups for IR emitters.

Setting the jumper for the type of IR emitters

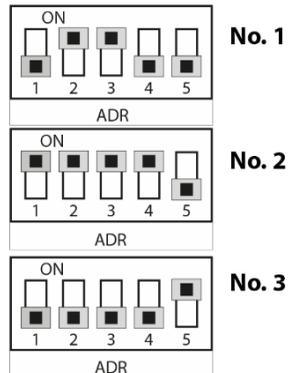
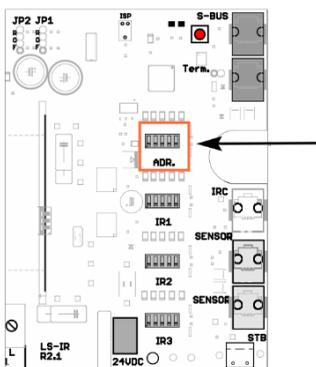
- 1 **GEFAHR!** Ensure that the IR relay box is current-free. Open the housing as needed.
 - ① Removing the housing cover.



- 2 Set jumpers JP1 and JP2 to foil (F) or emitter (R) depending on the connected emitters. See Emitter type – jumper JP1 and JP2.

Setting the unit address

- 1 Set the unit address as needed.

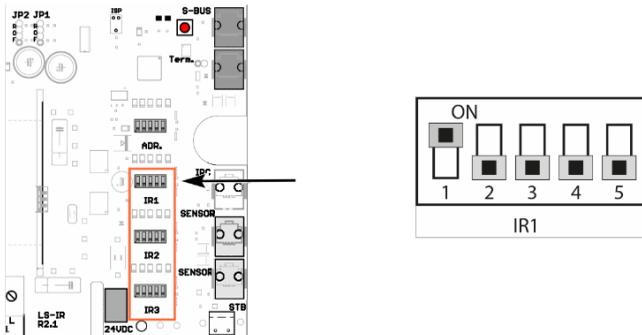


- ① The relay box is set to address no. 1 by default. As a rule, this setting must not be changed.

Setting channel groups for IR emitters

1 Assign the IR connection with DIP switch to a channel group.

① See Installation example.



See Channels – DIP switches IR1 to IR3.

① Only 1 DIP switch may be set to ON at one time.

Examples:

Switch 1 = ON: Channel group A

Switch 2 = ON: Channel group B

Switch 3 = ON: Channel group C

You can assign the IR outputs to the same channel group, e.g. IR-1 and IR-2 to channel group A, IR-3 to channel group B.

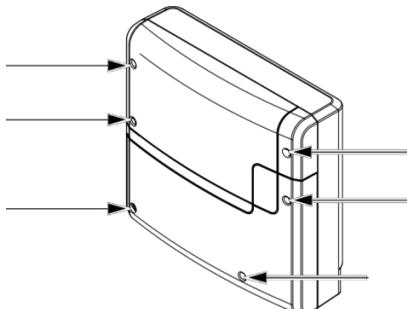
Closing the relay box housing

The following work must be completed before you close the housing:

- Connecting data lines
- Connecting and configuring consumers
- Setting the switches

Replacing the housing cover

- 1 Connect the power supply to the 24-V DC jack.
- 2 Put the upper and lower cover halves in place.
- 3 Screw in the 6 screws



Commissioning

The term IR emitter refers to infrared emitters and heating foils in the following documentation. In order to commission the cabin with the installed IR emitters, the cabin must be switched on at the control unit. If the display is blank, the relay box might be switched off. An on/off switch is located on the left side of the relay box.



Position I:
Relay box is switched on.
The relay box is ready for operation in standby mode.



Position 0:
Relay box is completely switched off.
Parts of the circuit board are still energized.



Position II:
Cabin light is switched on, relay box is switched off. Position for maintenance and cleaning.

Configuring the IR control system

The control system cannot be configured until the IR emitters are installed and connected. The following describes only how to configure the IR emitters. Complete configuration and operation are described in the operating instructions for EmoTouch 3.

You should be familiar with the basic operating steps, e.g. navigating the menus and sub-menus and entering and saving settings.

Icons

The following icons are used to assign the IR emitters.



Front middle



Front right



Front left



Back middle



Back left



Back right



Leg



Ceiling



Floor



Side right



Side left



IR group 1



IR group 2



IR group 3



IR group 4

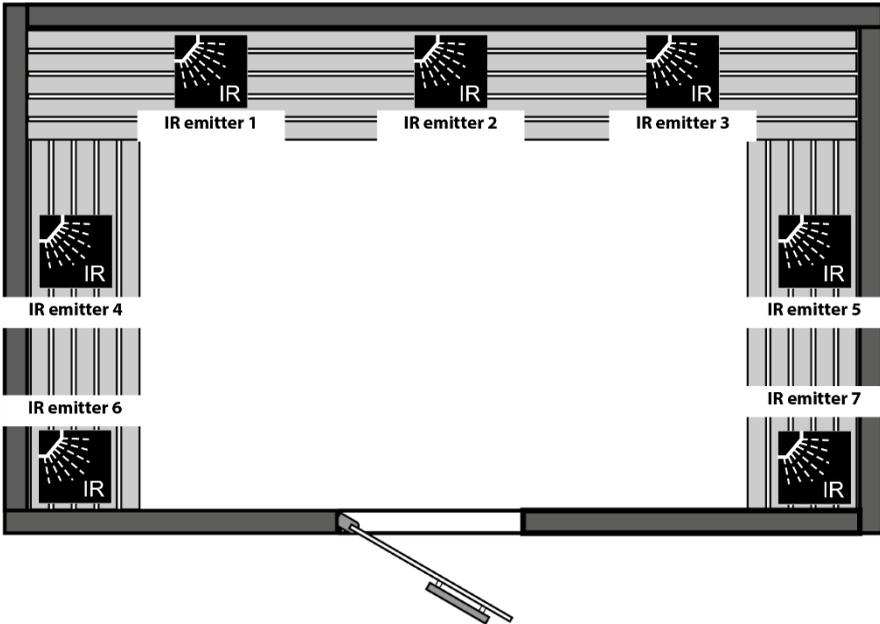


IR group 5

Each icon may be assigned only once.

Installation example

To make configuration easy to understand, the following example shows which switches must be set.



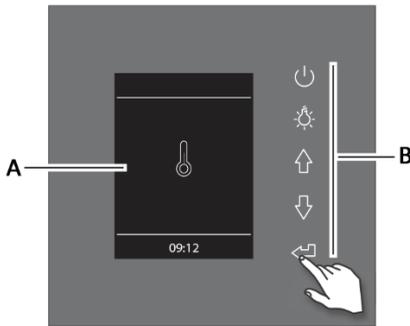
Example – cabin

The IR emitters in this example have different tasks and should be controlled together in so-called channelgroups.

- IR emitters 1, 2 and 3 are emitters for the back. Together their output is 1.5 kW.
- IR emitters 4 and 5 are foils for the heating the back with an output of 0.3 kW each. They should heat to an intensity of 66%.
- IR emitters 6 and 7 are corner emitters. Together their output is 0.5 kW. They should switch off once the cabin temperature reaches 65°C.

Emitter	Connection	Jumper	Channel
1, 2, 3	IR-1	Emitter (R)	A
4, 5	IR-2	Foil (F)	B
6, 7	IR-3		C

Impera IR operation



- A** Display
- B** Function buttons

The following icons represent operational functions:



Tap: Select the function and confirm.



Scroll back through functions.



On/off



Scroll forward through functions.



Light on/off



Open selected function.
Save settings.

The home screen (standby) appears after the display has not been touched for 15 seconds.

- Settings that have not been saved are lost.
- Date and time are saved if the built-in battery is in working order. All other settings are saved permanently.

Configuring during commissioning or after a reset

The basic settings must be defined to commission the unit. The program guides you through the required steps.

The home screen automatically appears after not using the control panel for 15 seconds. Settings that have not been saved are lost.

Defining the basic settings

- 1** Select a language and confirm.
- 2** Set the time and confirm.
- 3** Set the date and confirm.

4 Select the type of use and confirm:

a)  Private use

b)  Commercial use

① Specific safety regulations apply to this setting. See 1.3 Operator instructions,  7

In the sauna cabin, initial configuration involves additional steps, e.g. heater selection, etc. These steps are described in the installation and operating instructions for the corresponding sauna relay box.

You must select and configure the IR intensity and/or IR temperature operating modes once the channel groups are configured.

See configuring the channel groups.

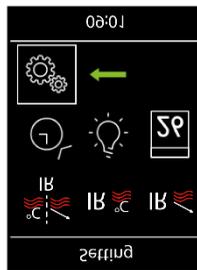
Configuring the channel groups

The settings are configured as shown in the example above.

Configuring the IR channel groups

1 : Select and confirm by pressing and holding until the code entry is displayed.

Impera IR: Press and hold the Enter icon.

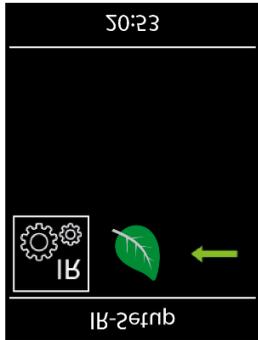
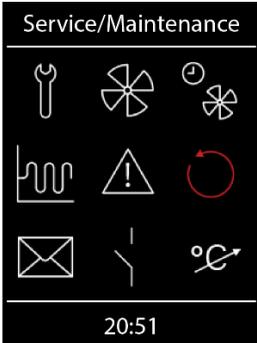


2 Enter code **5349** and confirm

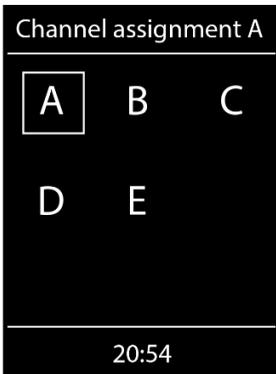


① Increase or decrease the numbers and confirm by pressing Enter. Confirmed numbers appear green.

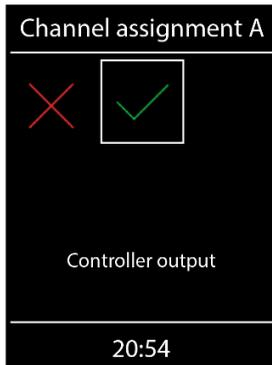
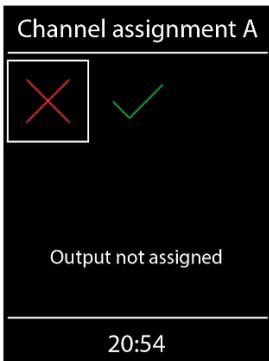
3 : Select and confirm.



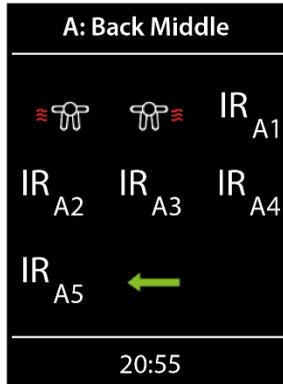
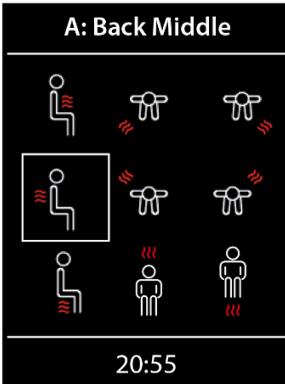
4 Select the channel and confirm.



5 Select the channel assignment and confirm.



6 Select the IR emitter icon and confirm



① You may assign each icon only once.

7 Follow the same steps to configure the next channel group.

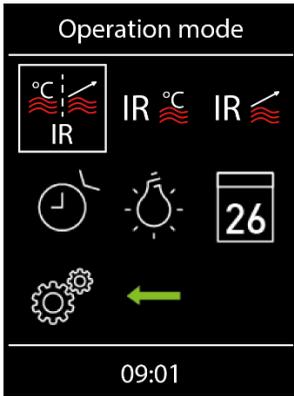
IR operating mode

After installation, you can set the operating mode, temperature and/or intensity. You can also define the switching hysteresis for the IR emitters. The IR emitters have two operating modes. These operating modes let you determine how the IR emitters can be used: via intensity and/or temperature.

Operating mode	Temperature	Intensity
	Ambient temperature can be set via temperature sensors Emitters heat until the temperature has been reached	All channel groups at 100%
	Ambient temperature increases slowly via channel group intensity	Can be set for each channel group

Setting the operating mode

1 : Select and confirm.



2 Select the IR operating mode and confirm.

a)  IR intensity. In this operating mode, only the intensity of the IR emitters can be set.

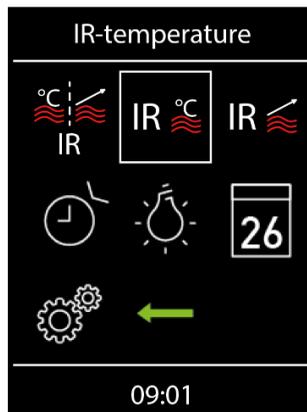
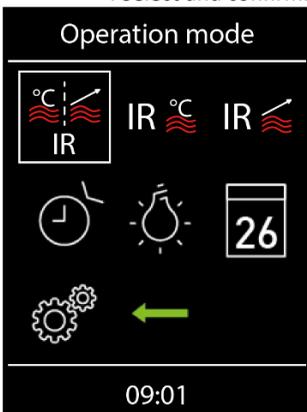
b)  IR temperature. In this operating mode, both the IR temperature and the intensity of the IR emitters can be set.

ⓘ Depending on the IR operating mode you select, you can now set the temperature and/or intensity.

Setting the IR temperature

Setting the temperature

1  : Select and confirm.



- 2 Set the temperature and confirm.



- 3 Confirm the set value.

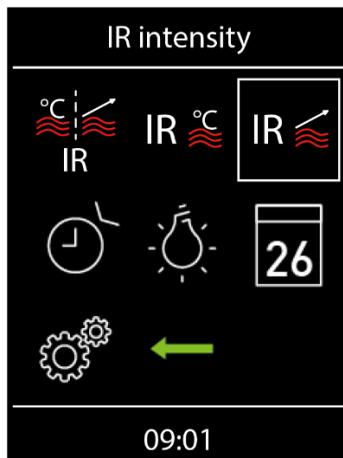
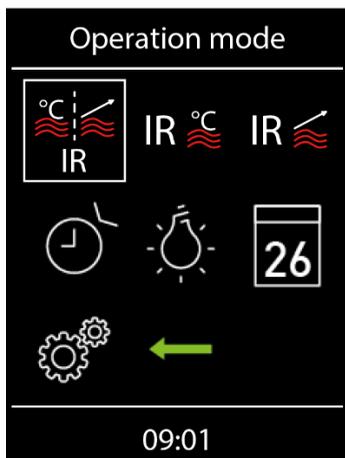
The value is saved and the display to the screen for operating mode selection.

Setting the IR intensity

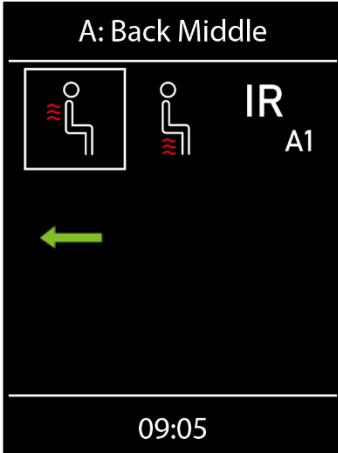
Setting the IR emitter intensity



- 1 : Select and confirm.

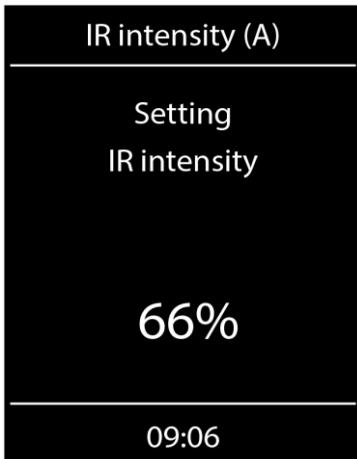


2 Select the channel and confirm.



① Only 0% or 100% may be selected for emitters at the IR-3 connection; 20%-100% for foils.

3 Set the IR emitter intensity.



① The value can be set in 2% intervals from 20% to 100%.

① Only 0% or 100% may be selected for emitters at the IR-3 connection; 20%-100% for foils.

4 Confirm the set value.

The value is saved and the display returns to the screen for operating mode selection.

The channel group emitters are immediately set to the new intensity. This means they are not set to target temperature.

5 Repeat steps 1 to 4 for the next channel.

Switching hysteresis for the IR temperature

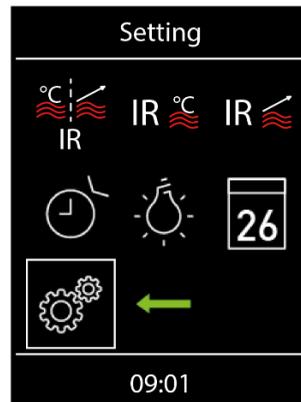
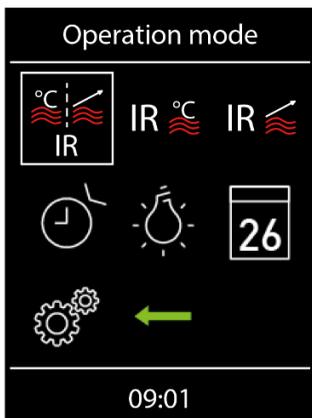
In the service settings, you can also set a temperature range within which the IR emitters are switched on and off. It applies to all connected IR emitters.

Example — 46°C target temperature and hysteresis 4 K: The IR emitter is switched off at 48°C and switched on at 44°C.

Adjusting the hysteresis

1 : Select and confirm by pressing and holding until code entry is displayed.

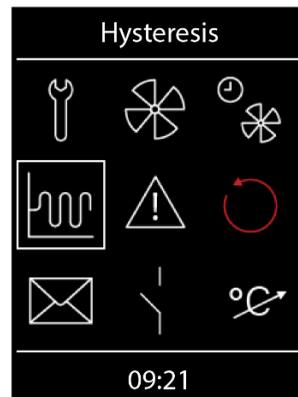
- a) EmoTec: Press and hold the jog dial.
- b) EmoStyle: Press and hold the Enter icon.



2 Enter code **5349** and confirm.

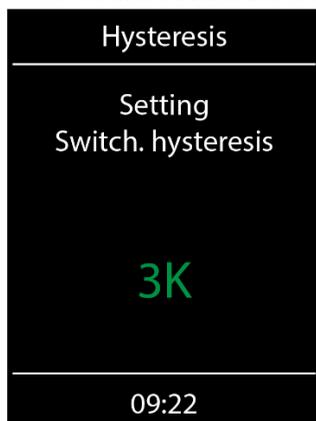


3 : Select and confirm.



ⓘ Increase or decrease the numbers and confirm by pressing Enter.
Confirmed numbers appear green.

4 Set the desired value and confirm.



The value is saved and the display returns to the selection screen for advanced settings.

Troubleshooting

Error message and icons on the control panel indicate SBM-IR Modul operating statuses and fault conditions.

Fault	Reason	Solution
Control panel display is blank	No power supply.	Switch on the relay box.
		Check the relay box's mains connection.
		Check fuses.
		Check the power supply
IR temperature cannot be set	Channels are not set.	Define channel groups.
Communication error	Sauna bus not plugged in.	Check data line and connections.
	Jumpers not set.	Set JP1 and JP2 for connections IR-1 and IR- 2.
	IR module is disconnected.	Set the heater operating mode.
	Channel groups not defined.	Define channel groups.
IR emitters do not heat.	Unit not detected.	Set unit address for the module.
Cabin is not displayed.	Cabin is not detected.	Check and set cabin address.
		Check the sequence of connections.
Thermo-fuse tripped.	Temperature too high.	Check cause of excess temperature. Replace fuse.
Unknown error.		Restart unit.
		Contact technical support.
No bus communication	Too many add-on modules connected.	Connect IR module with separate power supply.
	Bus connection plug not plugged in.	Plug in plug.
	Bus cable damaged.	Replace bus cable.

General terms and conditions of service

(T&C, Dated 008-2018)

I. Scope

Unless otherwise agreed in writing for specific instances, these terms and conditions of service shall apply to service operations, including reviewing and remedying complaints. All our existing or future legal relationships shall be governed solely by the following terms and conditions of service. We do not recognise any of the customer's conflicting terms and conditions unless we have given our express written consent to their applicability.

We hereby expressly object to any of the customer's terms and conditions included in the customer's General Terms and Conditions of Business or order confirmation. Unconditional acceptance of order acknowledgments or deliveries shall not be construed as any form of acknowledgment of such terms and conditions. Ancillary agreements or amendments must be confirmed in writing.

II. Costs

The customer shall bear the following costs in connection with services rendered:

- Disassembly/assembly and electrical (de-)installation
- Transportation, postage and packaging
- Function testing and troubleshooting, including inspection and repair costs

There shall be no third-party billing.

III. Performance and cooperation obligations

The customer shall provide assistance free of charge to the manufacturer in rendering services.

In the case of a warranty claim, the manufacturer shall provide replacement parts necessary for servicing free of charge.

IV. Service visit by the manufacturer

Services rendered on site by an employee of the manufacturer must be agreed in advance. If the main reason for the service visit is not the fault of the manufacturer, any costs incurred shall be charged to the customer after the service visit and must be paid by the customer in full within the agreed payment term.

V. Liability

The manufacturer shall assume liability in accordance with the currently applicable statutory regulations. All our products are packaged in such a way that the individually packed goods (pallets) can be shipped.

We wish to point out that our packaging is not suitable for individual shipments via parcel post. The manufacturer shall accept no liability for damages incurred as a result of improper packaging in an individual shipment.

VI. Manufacturer's warranty

The manufacturer's warranty shall apply only if installation, operation and maintenance have been carried out in full accordance with the manufacturer's specifications in the assembly instructions and instructions for use.

- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.

- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications are made to the equipment without the manufacturer's express consent.
- Any warranty claim shall likewise become void in the case of defects that arise due to repairs or interventions made by unauthorised persons or due to improper use.
- In the case of warranty claims, the serial and article numbers must be provided, together with the unit designation and a meaningful description of the fault.
- This warranty shall cover defective equipment parts, with the exception of normal wear parts. Wear parts shall include, for example, light sources, glass elements, tubular heating elements and sauna heater stones.
- Only original replacement parts may be used within the warranty period.
- Service visits made by third parties shall require a written order issued by our service department.
- The equipment in question shall be sent to our service department by the customer at the customer's own expense.
- Electrical assembly and installation work, including service visits and parts replacements, shall be carried out at the customer's expense; costs shall not be borne by the manufacturer.

Complaints in respect of our products shall be reported to the responsible distributor and shall be handled exclusively by said distributor.

The manufacturer's General Terms and Conditions of Business, in the version available at www.eos-sauna.com/agb, shall apply in addition to the foregoing terms and conditions of service.

Disposal



Electrical devices that are no longer needed must be recycled at a recycling station as per EU guideline 2012/19/EU or as per the Electrical and Electronic Equipment Act (ElektroG).

Observe local provisions, laws, regulations, standards and directives when disposing of the steam generator.



Do not dispose of the unit with household waste.

Packaging

SBM-IR Modul packaging can be completely separated for disposal and recycled. The following materials are used in the packaging:

- Used paper, cardboard
- Plastic foil
- Foam material

Electronic waste

Electronic waste must be disposed of at the designated local collection point for electronic waste.

Copyright information

Original installation instruction EN

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